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Editor - Captain L. B. Marshall, MC, USN

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Circular Letters:

Refrigeration in Medicine and Surgery

Within physiologic limits, the velocity of most biologic processes varies directly with the temperature. At temperatures close to freezing there is almost complete cessation of cellular activity. Conduction in a nerve trunk fails at, or below, certain critical temperature levels (25 to 30° C. in warm blooded animals), thus accounting for the phenomenon of refrigeration anesthesia. It has also been found recently that infections of an extremity can be treated successfully by chilling the affected part for a prolonged period; and that ice applied to an injection site causes slow absorption of penicillin into the blood stream. Gilbert et al. reasoned and proved that a combination of cold and locally infiltrated penicillin would produce a high concentration of the drug at the site of infection in an extremity.

Doane and Stein have proved clinically the value of decreasing the metabolism of severely injured extremities with refrigeration, and at the same time causing peripheral vasodilation by means of lumbar sympathetic block; thus decreasing the absorption of toxins and at the same time decreasing the spasm of blood vessels. In this way an attempt is made to bring the metabolism of the extremity into keeping with the available circulation.

In addition to the accepted use of refrigeration as an anesthetic agent for debilitated patients needing amputation, they stress that refrigeration can be used as a therapeutic and anesthetic agent for minor surgical procedures, as well as in the presence of certain peripheral vascular states.

For the past 7 years the authors have employed a mechanical refrigeration apparatus with blankets of various sizes. These are composed of many tubules, through which isopropyl alcohol is pumped, after chilling by the same principle as employed in the ordinary electric refrigerator. This apparatus is thermostatically controlled, so that by the turn of a dial, temperatures in the blanket can be elevated or reduced and will thereafter automatically remain constant. For example, a limb may be chilled in 3 or 4 hours so that painless amputation is possible; or, with a higher temperature set, moderate local or general refrigeration can be secured. The bed is made up with the large blanket under the patient, and fever can easily be controlled by the mere turn of a dial. By this method, inefficient and awkward spongings and the application of cold compresses to the axillae, groin and trunk are avoided.

Medical Uses. This technic has been employed in cases of hyperexia following hemorrhages of various degrees, head injuries and operations, depending upon the cause and location of the disturbance. The authors have also used it for hyperexia in certain medical states, such as thyroid crisis and pneumonia. For severe pain, the application of refrigeration in some form is highly effective. In the presence of acute pleurisy, cold applied to the thoracic area to which the pain is referred will often bring relief, which frequently persists long after the refrigeration ceases, and sometimes permanently. This method has also been used in cases of migraine and other vasospastic pain or pain due to vasodilata-

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tion, applying cold to the head by a specially designed tubulated blanket, which often brings quick relief. It has been used also in cases of continuing enteric fever and other severe toxemias, in which heat generation and regulation are disturbed.

Anesthesia. For incision and drainage of infections, especially of abscesses of the hand, finger, foot and toes, multiple anesthetic agents have been used. Nerve block with procaine hydrochloride is frequently unsuccessful; its use for a local block at the bases of fingers or toes may interfere with the circulation of the part; finally, there is a possibility of spread of infection to adjacent tissues. A simple and practical method that gives excellent anesthesia is to insert the infected part into a container of finely cracked ice for 30 to 60 minutes, without a tourniquet. The incision is then made, and the part may be returned to the ice for relief of pain. Many patients have been treated with this routine, without delay in healing. Furthermore, this method can be used in the office or ward and may make it unnecessary to use the operating room for minor procedures.

Debridement of ulcers with ice anesthesia is carried out by surrounding the ulcers with fine ice; and within 30 minutes one may remove necrotic tissue and crusts without pain. In these cases ice is of additional value as a therapeutic agent.

The reduction of fractures under refrigeration anesthesia was described in 1945. Doane and Stein stress the practicability of reducing a fracture dislocation of a finger, hand or toe by anesthetizing the part with ice. Packing of the part for 30 or 60 minutes in a can of finely cracked ice is sufficient for the necessary manipulation.

Surgical Uses. Hypothermia of burned areas results in decreased pain, edema and tissue damage. The application of cold to an early burn will cause a marked decrease in the amount of pain and exudation. With the gradual rise in temperature after a period of decreased temperature for 10 days, one notes that the slough can easily be removed and that islands of epithelium are present. The authors recommend the use of hypothermia for 6 to 10 days, after which the accepted form of treatment for the granulating surface may be instituted.

Many athletic coaches are familiar with the use of ice immediately after a severe strain or sprain has occurred. Patients seen soon after injury respond with earlier motion and decreased edema if the part is packed in ice for 1 to 2 hours. When the part is refrigerated, there is no pain. Motion while the extremity is being refrigerated will improve the local condition by actually improving the circulation and the tissue tone.

The refrigeration technic is also valuable for local use after surgical procedures. Skin temperatures beneath wound dressings or casts can be reduced by local reduction of temperature, either by the use of ice bags or in the form of mechanical refrigeration. This is of definite value in orthopedic procedures. In 345 cases, it was observed that subjectively the patients who have ice applied locally are far better than those who have none applied during the postoperative period. If there is a prolonged low temperature, metabolism is

reduced and allowance must be made for slower healing of the tissues. (J. Internat. Coll. Surgeons, Sept. 1951, J. C. Doane & H. D. Stein)

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Uptake of Radioiodine in Frozen Thyroid Carcinoma Tissues

The use of radioactive iodine in therapy of thyroid cancer is well established. Because of hazards to personnel as well as the technical difficulties in production, assay and dispensing, use of the isotope must be limited to well staffed and well equipped institutions.

The problem of determining which patient with thyroid cancer is suitable for treatment with radioiodine can be solved in medical centers where tracer studies and determinations of tissue uptake can be made. These diagnostic and prognostic tools, however, are not available to the average patient unable to visit such a diagnostic clinic. For these reasons the present studies were undertaken.

The author has previously shown that reasonable prediction of in vivo uptake radioiodine by a thyroid tumor can be made by observing the radioiodine uptake in incubated specimens of the tumor taken for biopsy. A total of 20 patients have now been studied in this manner, and without fail the radioiodine uptake in incubated specimens has paralleled the in vivo uptake of tracer or therapeutic doses of radioiodine.

If these observations are reliable, it seems that incubation studies of tumor tissue removed for biopsy might be a valuable adjunct to the evaluation of probable radioiodine uptake of the tumor in vivo. Furthermore, if methods could be devised to preserve the biopsy specimen during transit from the local physician to a laboratory equipped to handle isotope studies, a great number of patients might be served who otherwise would be treated without benefit of radioiodine studies.

It has been shown that tumor can be frozen for periods up to 2 years and remain viable when transplanted. Recent technics which both freeze and dehydrate tissues have kept tumors as well as normal tissues viable for indefinite periods of time.

A group of patients, ranging in age from 4 to 76 years, with thyroid carcinoma has been studied. Before administration of a tracer dose of radioiodine, a fragment of the tumor was removed for biopsy and 25-micron slices placed in a solution containing 10 ml. of buffered Krebs solution mixed with 1 μc of I^{131}. The slices were incubated for 2 hours at 37° C., being agitated by passing a gentle stream of oxygen through the solution. A duplicate tissue slice was quickly frozen by being placed in a sealed pill box which was then immersed in a solution of diethylether mixed with dry ice (temperature approximately - 70° C.). The frozen tissues were then maintained in a "deep freeze" until further studies were instituted. Samples were kept in this manner from 24 hours to 10 weeks.

For each sliced tissue sample studied, microscopic sections were made from the 2 sides of the slice. This offered reasonable assurance that one was

dealing with tissue of one tumor type, as well as a rough guide to the ratio between tumor and non-tumor components of the tissue slice studied. This report disregards all tissues studied in which pure tumor and its stroma were not obtained.

In each patient studied control tissues of skin and muscle and, frequently, normal thyroid were incubated. Subsequently, each patient received a tracer dose of 150 μc (Oak Ridge Standard) of I^{131} and a second fragment was removed for biopsy. In this way, the in vivo and in vitro tissue studies could be correlated.

The important observation in this study is that the differential absorption ratios for frozen and unfrozen tissue incubation studies are the same within the limit of laboratory error. Furthermore, previous observations indicate that tissue incubation studies and in vivo uptake studies of radioiodine provide consistently comparable differential absorption ratios. The frozen tissue studies represent thyroid carcinomas that have been preserved from 1 day to 10 weeks and no difference in incubation characteristics is observed.

In the authors' hospital, patients with a differential absorption ratio of greater than 20 in their thyroid carcinomas, 6 weeks or more after total thyroidectomy, are considered suitable candidates for radioiodine therapy. (Am. J. Clin. Path., Sept. 1951, W. N. Harsha & B. R. Harsha)

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Premenstrual Tension

The bleeding phase of the menstrual cycle rarely appears unannounced. Many women experience such signs and symptoms as anxiety states, depression, lower abdominal pain, thirst, breast fullness and personality changes of a mildly antisocial nature. Menorrhalgia was suggested by Hamblen as a descriptive term for this complex. These symptoms are accepted philosophically by most women, but there is a minority group, perhaps 25 percent, who require medication.

Premenstrual tension is a symptom complex related to abnormal water storage during the premenstrual period. It is essentially a water toxemia. Intensity of symptoms varies with the amount of water retained. Symptoms are severe when premenstrual weight gain exceeds 5 lb.

The etiology is unknown. That the disturbed water metabolism is related to ovarian steroid secretion seems probable. It is also possible that some alteration in posterior-pituitary or adrenal-gland function induced by the cyclic production of ovarian steroids may be a factor. It should be recalled that water storage during the premenstrual period is normal; only when tissue hydration is excessive does the clinical syndrome of premenstrual tension appear.

The syndrome can be reproduced in part during the corpus-luteum phase of the cycle by the daily administration of pitressin, the water-fixing substance of the posterior pituitary. Water storage up to 4 lb. may be artifically induced in some patients and many of the symptoms likewise induced. However, it is not known whether or not there is increased pitressin secretion during the premenstrual

period. Adrenal corticoids are increased premenstrually, and the edema following cortisone administration is associated with similar complaints. These observations provide interesting avenues for speculation about the etiology.

Clinical Study. A study has been made of a group of 22 patients between the ages of 25 and 35 years who complained of distress during the premenstrual epoch that was relieved at or near the onset of flow. Headaches, nervous irritability, insomnia, abdominal distention, low-back pain, pelvic fullness, breast tenderness and unusual thirst were the symptoms reported in order of frequency. The symptoms began in most patients about 8 days prior to menstruation, but in others the duration of symptoms was shorter. The average duration of symptoms prior to menstruation was 6.9 days. In all patients the symptoms reached a crescendo just before or during the first few hours of menstruation, to be relieved at or near the onset of the flow.

Eighteen of the patients menstruated on a cycle of 25 to 35 days. The premenstrual tension syndrome was not observed in a cycle of less than 25 days. None of the patients complained of severe dysmenorrhea. Although the syndrome of premenstrual tension and dysmenorrhea may appear concurrently, it is the exception and not the rule.

Basal-temperature charts were kept on 16 of these patients and in each case showed a marked biphasic shift. The basal temperature often rose to 98.4°F. in the morning during the premenstrual week. Endometrial biopsies were taken on 12 patients at or near the onset of menstruation. A well developed secretory phase was found in each case. It appears that symptoms of premenstrual tension occur only in those patients who ovulate and who have active corpus-luteum function.

In this group of 22 patients with severe symptoms the average weight gain was 6.8 lb. This abnormal water storage was effectively blocked by a new drug, pyrilamine 8 bromo theophyllinate, but not by ammonium chloride. In 3 human females pitressin-induced edema was blocked by the compound. The drug was administered in 50 mg. tablets; 1 tablet 3 times a day for 10 days before menstruation. Medication was stopped at the first sign of menstruation.

Pitressin-induced edema in rats could not be unblocked by testosterone or ammonium chloride but was effectively unblocked by the new compound. (New England J. Med., 20 Sept. 1951, W. Bickers & M. Woods)

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The Preclinical Recognition of Toxemia of Pregnancy

There has been a constant search for a means of determining which patients might be prone to develop toxemia of pregnancy before the time of appearance of clinical symptoms. Attempts have also been made to develop a method which, when applied to patients who have suffered with previous toxemia of pregnancy or who have had pre-existing cardiovascular-renal disease, would

predict or prognosticate their ability to withstand subsequent pregnancy without a recurrence or exacerbation. The authors believe they have found such a method.

This study originated in February 1950. In 1949, Krasno and Ivy had described a method for determining, hypothetically, the presence of vasospasm or vasomotor hypertonus in the ocular fundus. In their report they alluded to several patients who had suffered from pre-eclamptic toxemia, along with their more exhaustive study of other vasospastic conditions of a medical nature. Krasno and Ivy felt that they could predict the subsequent development of a more serious vascular disease, and possibly of an impending vascular accident, by measuring the response of the retinal vessels to a small dose of nitroglycerine, the condition of the retinal vessels being only an indicator of a generalized vasomotor hypertonus. Since vasospasm is an integral part of the general picture of toxemia of pregnancy, it was believed that with a sensitive test the presence of such spasm in a pregnant woman could be determined. Therefore, the appearance of a subsequent toxemia could be predicted, if the patient had not been afflicted with a previous disease to explain the vasospasm.

This presentation is a preliminary report which provides the results obtained on a relatively small number of patients during a rather short period of time. Nevertheless, the observations were so uniformly predictive that it was felt appropriate to call them to the attention of other observers in order to obtain a wider use of the test, and thus a better evaluation of its potentialities. Others are urged to take up this study and help amass sufficient material, either to prove or disprove the present apparent potentialities of this test.

Method. In performance of the test, the apparatus designated as the Krasno-Ivy flicker photometer is used. This machine measures the visual threshold for the fusion frequency of flicker, or the ability of a person to recognize flicker. By this is meant the phenomenon whereby a normal individual will see as a steady source of light the ordinary light bulb which actually flickers at the rate of 60 times per second. If the frequency of the flicker is gradually reduced it will eventually be detected by the observer, usually when the rate, depending on the light intensity, reaches about 40 per second, although the actual rate differs for each individual and may vary in the same individual due to various factors. However, for a period of minutes up to several hours and unless the environment of the patient is changed, the ability to recognize flicker remains very constant. The resulting measure in flashes per minute is called the Flicker Fusion Threshold or FFT.

The photometer is so constructed that the frequency of the flicker can be increased or decreased, and the rate of flicker per minute at any point can be read on a dial.

The test, as conducted on the Krasno-Ivy flicker photometer, is designed to detect ocular vasomotor tonus as it is affected by the administration of nitroglycerine. The patient is seated in a resting position for 10 minutes before testing is begun. Smoking is to be avoided for 6 hours preceding the test and alcohol must not have been used during the previous 24 hours. Medication with hypnotics,

vasodilator drugs or analeptics must be considered in the interpretation of the results. If the patient normally wears glasses, these should not be removed for the test. Binocular vision is always employed. The patient is seated 1.6 meters from the frosted-glass illuminated viewing window, the distance being accurately obtained by measurement with the cord attached to the machine.

The action of the machine is first explained to the patient and she is instructed to say "Yes" as soon as flicker in the light is detected. Several trial readings are taken in order to accustom the patient to the action of the machine, then 3 successive readings are obtained as the "normal" base line for that patient. The patient is told to report flicker just as soon as she thinks the light is flickering and that she should not debate the question whether it is or is not flickering. When these precautions are taken it is surprising how accurate and constant these readings are for each individual, and how little any of the readings will vary from each other. A tablet of 1/100 gr. nitroglycerine is then administered sublingually, the patient being told to allow the tablet to dissolve without swallowing. Two minutes are allowed for dissolution and absorption of the drug and another series of 3 readings is then made at 2 minute intervals and recorded. If no appreciable difference is noted between these and the original, or control readings, after 6 minutes, another tablet of nitroglycerine is given and the routine of the 3 tests is repeated.

In normal subjects the use of nitroglycerine will produce a dilatation of the arterioles and congestion of the retina with a resulting impairment of the ability to recognize flicker which is indicated by a lower FFT. This is referred to as a negative, or normal, test. In vasospastic individuals, the retinal vessels will dilate under the influence of the nitroglycerine, the blood flow and oxygenation of the retina will be improved, and the FFT will rise; in other words, the ability to recognize flicker will be improved, resulting in what is designated as a positive, or abnormal test.

In all, 400 tests were conducted on 199 patients. Of these, 161 showed consistently normal responses and can be considered as controls; 38 patients showed abnormal, or positive responses. Twenty-three of these 38 patients showed no clinical signs of toxemia and had no past history of toxemia of pregnancy or of cardiovascular-renal disease. Of these, 10, or 43 percent, later developed clinical signs of toxemia of pregnancy. The other 13 patients were undelivered at time of writing. In this study, no patient has yielded a positive test who did not have pre-existing disease, or who did not subsequently develop signs of toxemia of pregnancy, except for those in the undelivered group, the outcome of which is yet unknown. The time lapse between determination of a positive test and the appearance of clinical signs varied from 2 to 8 weeks, the average being 4.6 weeks. In addition, it was found that every one of the 8 patients who came to the clinic with actual clinical signs of toxemia of pregnancy showed a positive F. F. T.

Comment. In view of the observations presented, it is believed that certain tentative conclusions may be drawn and certain assumptions and speculations be presented. Since 161 patients who had normal tests completed their pregnancies without toxemia, it is felt that any patient who shows several normal FFT tests,

especially in the third trimester of pregnancy, can be safely assured, from a statistical viewpoint, that she will not develop pregnancy toxemia.

Conversely, a patient who displays a positive, or abnormal test during the course of a pregnancy has either pre-existing cardiovascular-renal disease or will develop toxemia of pregnancy before she reaches term. Since most women with pre-existing vascular lesions or previous toxemia of pregnancy are aware of this and will tell of it during the course of their history taking, one can, statistically, assume that ostensibly normal women who, during pregnancy, develop positive FFT tests will show signs of toxemia before delivery. A further advantage of the FFT test is that its use aids in estimating the adequacy of the management of the patient. (Am. J. Obst. & Gynec., Sept. 1951, H. A. Brill, M. J. Golden, H. L. Woolf, A. H. Klawans & J. S. Long)

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Management of Impacted Maxillary Third Molars

In removing impacted maxillary third molars operative complications sometimes occur because of the proximity of the maxillary sinus and the structures of the pterygomaxillary space. The tuberosity frequently is fragile bone, prone to fracture from the slightest misapplication of force.

This article is confined to the vertical maxillary third molar impaction, commonly removed by the general practitioner. In most cases this tooth has a small crown and a modified root curvature, usually to the distal. The roots usually are fused, but may be divergent. The tooth lies just beneath the alveolar crest and close to the distal surface of the second molar. Too frequently these problems are handled by forcing a sharply pointed elevator through the thin buccal plate distal to the second molar, and, using the second molar as a fulcrum, pressure is exerted in a backward and downward direction until the embedded tooth is forced out. This article presents a thorough and careful technic for the management of this type of impaction, with emphasis placed on safeguarding the surrounding structures.

A first requisite is careful roentgenographic examination revealing the entire tooth with the bone in its immediate environment. In addition to intraoral studies, it may be desirable to make occlusal and extraoral views.

The flap is made as follows: The mucoperiosteum over the first molar site just short of the mucobuccal fold is entered with a scalpel. The incision is carried downward and backward through the interproximal septum separating the first and second molar teeth. From this point the incision is carried along the buccogingival margin around to the distolingual aspect of the second molar tooth, and distally over the tuberosity, stopping just short of the junction of the tuberosity and the pyramidal process. The entire flap is raised with a periosteal elevator. Tenacious fibrous tissue must be removed by scalpel dissection before raising the flap, for any force applied with the elevator may tear the flap. With the flap raised, blood should be removed by suction, to assure vision for the operator.

The next step is removal of buccal and occlusal bone overlying the crown of the tooth. This may be accomplished by use of burs, or by mallet and chisel. The entire buccal and occlusal anatomy must be exposed and identified. Usually the buccal bone is thin and may be shaved away with a sharp chisel. Once these surfaces are free of bone, the tooth may be luxated in several ways.

It is well to keep in mind the complications that may arise from misapplication of luxating force. In the event of close proximity to the sinus floor, care must be used in applying forceps beaks to the crown of the tooth. Trying to force the beaks upward around the crown of the tooth may force the tooth into the maxillary sinus. If an elevator is interposed between the exposed crown and the distal surface of the second molar, misapplication of force may fracture the tuberosity, or force the tooth upward and backward into the pterygoid fossa.

To remove the tooth, interpose a thin elevator between the crown and the buccal alveolar bone. With moderate pressure the elevator is pressed against the crown of the impacted tooth, and slight lingual pressure exerted. This will frequently bring the tooth down to a point where it may be grasped with a rongeur forceps.

In the event of distal curvature of the roots, a sharp pointed elevator may be interposed between the cementoenamel junction of the impacted tooth and the mesial bone septum - never against the distal aspect of the second molar. The index finger of the free hand is placed firmly behind the posterior aspect of the tuberosity. Moderate pressure is applied by turning the elevator face downward. The finger distal to the tuberosity will prevent the tooth from slipping backward and upward into the pterygoid space. No distal pressure must be applied with the elevator, or the tuberosity may fracture. If moderate downward pressure does not rotate the tooth out of the socket, another technic must be used.

A groove, large enough to admit an elevator, can be cut into the cementoenamel junction with a bur. Downward pressure with the elevator may deliver the tooth. If the foregoing steps fail, there is no choice but to expose the entire buccal aspect of the roots. Splitting of this tooth is not recommended, as the force necessary to split it with a mallet and chisel may drive it into the maxillary sinus, or fracture the tuberosity. Removal of the crown is also contraindicated as there may be considerable difficulty and danger in delivering the root fragments. This region presents a most delicate bony structure, and any gouging and forcing pressure may lead to complications. During luxation of the tooth, the cause of the slightest resistance or impingement must be sought out and removed, never overcome with elevator force. Buccal bone will regenerate well, but a fractured tuberosity, or an invaded sinus may inconvenience a patient for life.

With removal of the tooth accomplished, retained epithelial elements and spicules of bone are removed. Prominent or irregular bone margins are smoothed with a rongeur forceps, bone file or antrum bur. Rarely is a drain necessary. In the average bony cavity, there is no substitute for a healthy, well organized blood clot. One suture on the mesial and one on the distal of the second molar will hold the flap securely. (J. Oral Surg., Oct. 1951, I. V. Uhler)

Urologic Indications for Therapeutic Abortion

Studies on therapeutic abortion appearing in the literature reveal a varying incidence in those indications of a urological nature. In general, cases must be divided into those of a purely urological nature and those with vascular or hypertensive components. Thus, most authors list one group of indications under the general term of hypertensive cardiovascular renal disease, and include those cases of renal nature which are complicated by cardic changes and hypertensive disorders. In this group are usually included those patients in whom a previous toxemia has apparently left kidney damage as a residuum of the toxemic process.

The following urologic conditions usually call for interruption of pregnancy when the latter is complicated by their existence:

1. Renal tuberculosis. Renal tuberculosis of any degree of activity whatsoever is felt to be an indication for therapeutic abortion. Although it is becoming increasingly appreciated that pulmonary tuberculosis seldom requires interruption of pregnancy in its treatment, the added hazards when the urinary tract is the site of involvement makes the continuation of pregnancy in these patients unwise. If one kidney has been previously removed for tuberculosis, pregnancy is felt to be contraindicated. A possible exception may be permitted if there has been a period of 5 years following surgery without evidence of involvement of the remaining kidney.

2. Genitourinary malignancy. The high incidence of recurrence plus the physiological changes induced in the urinary tract by pregnancy makes continuation of the latter especially hazardous.

3. Congenital polycystic disease. The bilaterality of this condition usually contraindicates the added strain of pregnancy. Certain selected, carefully studied cases which are free of demonstrable infection may be carried through pregnancy under careful observation, but the course may require termination in any trimester. This indication is especially urgent if one kidney has already been removed for the disease, because of the bilateral nature of the condition.

4. Hypertensive cardiovascular renal disease. These cases are of a vascular nature and are among the most urgent indications for therapeutic abortion. The renal component may be predominant or may be secondary to the hypertensive and cardiovascular aspects, but in general patients so affected are poor childbearing risks.

5. Chronic nephritis. In this group are those cases in which permanent renal damage has been sustained as a result of acute infectious processes. The damaged urologic apparatus is poorly equipped to withstand the load superimposed by pregnancy, and failure in the middle trimester is exceedingly frequent. Therapeutic abortion is indicated in the presence of grossly demonstrable renal impairment in these patients.

6. Problem of the nephrectomized patient. There is general agreement that the patient with one lone kidney may tolerate pregnancy without undue fear. However, there must be careful selection of patients permitted to proceed. Tests must be carefully performed and the results closely evaluated to determine the status of the remaining kidney. In addition, an accurate knowledge of the pathological condition which necessitated removal of the other kidney is essential and is of great prognostic importance. It must be remembered that although one kidney is adequate for all essential body functions, there is required from 12 to 18 months for maximum compensatory hypertrophy to occur. The time interval after nephrectomy is therefore also of importance. It is generally felt that a minimum of 2 years should elapse after nephrectomy before pregnancy is permitted, with 3 years being a more optimum period.

Whether it is the right or the left kidney which remains is of importance. The uretero-pelvic changes brought about by the hormonal and dynamic alterations of pregnancy are always more marked on the right side. Ureter and kidney pelvis dilatation is greater, hypotonicity and stasis are more severe and consequently the chances of infection are increased on this side as compared with the left. In general terms, then, a nephrectomized patient with the remaining kidney being on the left is a better risk in pregnancy than one with her sole kidney being on the right.

In patients with a solitary kidney the determination of any existing damage due to vascular or infectious processes assumes even greater proportions than noted above in the various indications for abortion. Even minor degrees of impaired function call for termination of the pregnancy. In addition, the development of any signs of toxemia or upper urinary tract infection makes interruption of pregnancy mandatory in these patients. The development of nephrolithiasis in a remaining kidney is also of serious import.

A history of other surgical procedures involving the urinary tract demands careful analysis of present function, as does history of known urinary infections. Vaginal plastic procedures and gynecologic surgery may so alter the lower urological apparatus that subsequent pregnancy might be hazardous. An important example of the former is the case where cystocele repair has been performed by means of an interposition operation. If this procedure is done in the childbearing years and tubal ligation is not also performed, the occurrence of pregnancy constitutes an absolute indication for therapeutic abortion, since rupture of the surgically interposed and fixed uterus is almost inevitable.

As previously noted, many indications for therapeutic abortion have been removed from the accepted list by reason of continuing advances in medical and surgical care together with improved obstetrical knowledge. The so-called pyelitis of pregnancy formerly required termination of pregnancy for its successful treatment in many cases. However, the response of this condition to the sulfonamides and antibiotics has been most gratifying; this is no longer felt to be a justifiable indication. Nephrolithiasis rarely should require therapeutic abortion since successful surgical treatment can be instituted in the presence of pregnancy without undue risk to the patient. Exception is found in those cases in which calculi

develop in the lone kidney of a nephrectomized patient. (Urol. & Cutan. Rev., Oct. 1951, K. P. Russell & D. G. Tollefson)

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Tuberculomas of the Mediastinum

The extremely small number of mediastinal tuberculomas reported in the literature might easily lead to the belief that the lesion is one of great rarity. The writers have recently observed 6 cases of mediastinal tuberculoma, however, 5 of them proved at operation, and it is their conviction that these masses of tuberculous origin are much more common than might be surmised on the basis of the few cases reported. It is also believed that sufficient accumulated experience will permit a correct preoperative diagnosis to be made with reasonable certainty in an appreciable percentage of cases.

The general principle that all isolated tumors of the mediastinum should be surgically extirpated has been widely accepted. Many of these lesions will prove to be malignant. Others, though originally benign, tend to undergo malignant degeneration. Finally, even those tumors which remain benign are not without serious hazard to the patient; by pressure and displacement of neighboring organs and structures serious impairment of function or even death may result.

As there is no method whereby a positive diagnosis of mediastinal tuberculoma can be made preoperatively, it is believed that virtually all of these patients should be subjected to exploratory thoracotomy. Removal of the mass at the time of operation is advocated if it can be accomplished with reasonable safety.

In the authors' series, roentgenographic studies consisted of both roentgenography and fluoroscopy. Posterior-anterior stereoscopic films employing both the standard and Potter-Bucky technics were obtained in all 6 cases and a right or left lateral film, depending on the side of the mediastinum to which the mass projected, was a part of the routine roentgenographic study.

The chest roentgenograms were of the greatest value in the diagnosis of these masses. In the frontal projection in the typical case a smoothly outlined, rounded area of increased density was seen projecting to the right of the mediastinum with its inferior border at the level of the crotch formed by the junction of the azygos vein with the superior vena cava. Stereoscopically, it could be seen that the lesion lay slightly anterior to the mid-plane of the chest as measured in the anterior-posterior diameter. The lateral view confirmed the position of the mass, showing it to be situated along the anterolateral tracheal wall with the inferior margin at the level of the terminal portion of the azygos vein. Since the lesions characteristically appear quite round in this view also, their spherical or ovoid shape is established. The lesions are invariably solitary, in contradistinction to tuberculous mediastinal nodes which are usually multiple and commonly bilateral.

All except one of the mediastinal tuberculomas which were encountered have been of regular contour and sharply marginated. In this respect their roentgenographic appearance is quite unlike tuberculous adenitis and they

simulate various true tumors of the mediastinum much more closely. Fluoroscopy corroborated the film evidence and showed that the lesions did not move with the lung on respiration and were therefore extrapulmonary in location.

A thorough investigation for the presence of active tuberculosis is of course mandatory when a lesion considered a possible or probable mediastinal tuberculoma is discovered.

It is emphasized that an accurate diagnosis of these lesions can only be established after thoracotomy with removal or biopsy of the mass. Routine histologic study, supplemented by special staining procedures and specific cultural methods applied to the excised specimen, will then usually establish the true nature of the lesion.

No authentic statement can be made as to the proper postoperative management of these patients. In the present series the lesions were considered to be of tuberculous origin and, motivated by the desire to err on the side of safety, the patients were maintained on strict bed rest for 3 months postoperatively. Thereafter they were all allowed out of bed for progressively increasing periods until they had completed 6 months of postoperative medical care before return to full activity. Streptomycin, 1 Gm. daily, and PAS, 12 Gm. daily, were given postoperatively in courses of from 6 weeks to 4 months. All patients reported in this paper were personnel on active duty in the Armed Forces. Five of the 6 patients have been returned to full duty, and it is anticipated that the remaining person will receive similar disposition upon completion of his arbitrarily chosen 6 month period of postoperative rest. There is no assurance that the regimen which has been adopted is either necessary or advisable. Clarification of this point must await the report, with long-term follow-up, of similar cases treated by various methods. (Am. Rev. Tuberc., Oct. 1951, Capt. C. F. Storey, MC, USN & Cdr. H. A. Lyons, MC, USN)

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Malignant Neurilemomas of Peripheral Nerves

The present material is based on a study of 31 cases of malignant tumors of the peripheral nerves seen at the Memorial Hospital. As these neoplasms can occur in every region of the body, their diagnosis and treatment present a problem to each specialty in surgery.

Malignant neurilemomas, neurogenic sarcomas, neurosarcomas and malignant schwannomas are synonymous terms for malignant peripheral nerve tumors that can be traced to the Schwann cells of the nerve sheath. These tumors are found in patients who may or may not have the classic or any abortive type of von Recklinghausen's disease. These tumors are so designated because of their origin from nerves arising either from named nerve trunks or their branches or in other benign nerve tumors. They are separated from other sarcomas of the soft somatic parts by their anatomic origin and less certainly by their histologic structure. They differ from the other sarcomas because of their tendency to proliferate along nerves.

It is believed that a simple classification which would denote the origin of these tumors and their behavior characteristics would tend to clarify a varying nomenclature, if adopted. Whether a neurofibroma is a single small subcutaneous tumor forming on the end of a peripheral nerve, encapsulated neurilemoma, tortuous conglomeration of such tumors as occurs in elephantiasis neuromatosa causing a marked deformity of any part of the body or a solitary plexiform neuroma producing a tortuous enlarged nerve trunk, the basic pathologic disorder in all such variants is a non-orderly overgrowth of Schwann cells and connective tissue with the basic element arising in and from the Schwann cells.

The following terminology is therefore proposed: (1) benign encapsulated neurilemoma (neurinoma, schwannoma, perineural fibroblastoma, peripheral glioma, neurilemoma; (2) benign plexiform neurilemoma (neurofibroma, plexiform neuroma, plexiform neurofibroma, elephantiasis neuromatosa, elephantiasis neuromatodes; (3) malignant neurilemoma (malignant schwannoma, malignant neurofibroma, neurosarcoma, neurogenic sarcoma, neurogenous sarcoma, fibrosarcoma of peripheral nerves).

Malignant neurilemoma as a distinct entity apart from the usual fibrosarcomas has been recognized for a long time. Many authors have made notable contributions to the subject. Thompson, in his review of mediastinal tumors and cysts, has summarized the pertinent literature pertaining to the manifestations of the neurogenous, malignant and benign tumors found within the chest. However, when one is confronted with a patient suffering from a malignant tumor of peripheral nerves and who has been treated by inadequate means over a number of years, it is apparent that many surgeons today still do not recognize the seriousness of the problem with which they have been dealing.

The review of this particular type of malignant tumor of peripheral nerves indicates that these neoplasms are found frequently with classic von Recklinghausen's neurofibromatosis or many occur in isolated instances in which even close examination will not reveal the patient to have any stigmata of the forme fruste type of neurofibromatosis. Regardless of this association, the behavior of these malignant tumors is in no way different. It is a clinical fact that when more than one malignant neurilemoma occurs in a patient with von Recklinghausen's disease that patient is seldom cured. The explanation is possibly that in this disease although one tumor may be eradicated other nerves in the same or other regions have a tendency toward the same type of malignant transformation. This occasionally noted phenomenon would tend to support Hosoi's opinion that nerves in the area or other regions will frequently assume the same degree of neoplasia. Although a local recurrence is assumed to be a residuum of the growth excised primarily, the possible explanation may be that other nerves in the location, which had exhibited only the histology of a plexiform neurilemoma at the first operation at a later time became transformed into fully developed malignant tumors. It may be impossible to tell if such a neoplasm is truly an original lesion or an extension along a nerve trunk by direct growth or lymphatic dissemination.

The authors believe that to make a diagnosis of malignant nerve tumor of the type under discussion, the tumor must be shown to arise in definite nerve tissues. Without this anatomicopathologic relationship, on pure histologic grounds, the malignant nerve tumors cannot be readily separated from various fibrosarcomas or leiomyosarcomas.

The malignant nerve tumors of low histologic grading offer a good prognosis despite a frequent high recurrence rate. Those tumors with a high degree of anaplasia are almost invariably fatal because of the great frequency of metastases despite the most radical methods of extirpation. Therefore, the rate of curability is influenced by the local recurrence rate because succeeding recurrences most frequently show a higher degree of anaplasia. Occasionally the opposite is true; a recurrence may appear less malignant than the primary tumor. Although tumors with a structure which the authors diagnose as grade I malignant neurilemoma will metastasize, this is rare. The tumors of low grade malignancy and those located superficially are the most frequently cured. There was only one 5 year survival in a patient with grade III anaplastic tumor in this series.

The eradication of malignant neurilemomas can be effected only by radical surgery, either by radical local excision or amputation with generous sacrifice of the nerves from which they originate. Radical excision at the first attempt at eradication is often the only golden opportunity for permanent cure. (Am. J. Surg., Oct. 1951, J. O. Vieta & G. T. Pack)

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Infectious Lymphocytosis

Infectious lymphocytosis was first described by Smith in 1941 as a distinct clinical entity, characterized as a benign process associated with a marked leukocytosis and absolute lymphocytosis. He emphasized that this disease was infectious, contagious, and added that the clinical signs and symptoms might be so mild as to escape attention. There could be varying degrees of constitutional reaction such as vomiting, fever, irritability, abdominal signs and symptoms and occasionally signs of involvement of the central nervous system. In his cases the heterophile antibody tests were negative. The leukocytosis and absolute lymphocytosis were due to an increased number of small lymphocytes. Lymph node biopsies in two of his cases were similar. The nodes showed "degeneration of the lymph follicles and a striking proliferation of the reticuloendothelium of the sinuses."

Instances of infectious lymphocytosis noted following trauma have not been previously reported in the pediatric literature. The authors discuss 2 children in whom trauma preceded the discovery of the lymphocytosis. The cases which the authors describe apparently fulfill the criteria for such a diagnosis, since there was no definitely known precipitating cause and the hematologic features were identical to those seen in infectious lymphocytosis.

The examination of the bone marrow afforded an opportunity to dispose more effectively of the possibility of a leukemic process. A careful study of the peripheral smear should be sufficient to rule out any of the other possibilities, i.e., infectious mononucleosis or the acute leukemias.

In both cases, slight to mild eosinophilia was noted. This finding has been noted by the previous observers. No abnormalities of the eosinophiles were found. No apparent correlation could be obtained between the severity of the lymphocytosis and the degree of eosinophilia. The increase in eosinophile count was essentially an absolute value, with the total, rather than relative, amounts being more significant.

A marked lymphocytosis was noted. It was within the range of values usually described for the disease. The lymphocytes were all mature and no possible doubt as to their being "blasts" or the atypical mononuclear cells of infectious mononucleosis could be entertained. For the most part these lymphocytes were of the small and compact variety rather than the large type associated with a very pale blue cytoplasm in which azurophil granules were commonly noted.

The degree of lymphocytosis apparently bore no relationship to the severity of trauma. Case 1 represented an instance in which little or no pathologic findings were detected. A moderately severe concussion represented almost the entire extent of trauma. Case 2 presented a comminuted fracture of the femur associated with a linear fracture of the pubis. No therapy other than observation was required for the former while open reduction was necessary in the latter case. The elevation of white cell count, the percentage of lymphocytes and eosinophiles were virtually identical. The return to normal values was, however, more prolonged in Case 2.

The heterophile antibody test was performed in both of the patients with negative findings. This test was an important laboratory procedure in ruling out infectious mononucleosis. The failure to find granulomatous lesions in the bone marrow aspirations also was of value in excluding the diagnosis of infectious mononucleosis.

In both cases the differential diagnosis of acute leukemia or infectious mononucleosis had been considered after the results of the blood counts were obtained. (J. Pediat., Oct. 1951, S. Waldman & A. M. Frumin)

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Treatment of Clubfoot

Talipes equinovarus or clubfoot is a common congenital anomaly, making up about three-fourths of all abnormal conditions of the foot present at birth. It occurs about once in each thousand deliveries and is twice as prevalent in males as in females.

There are 4 distinct elements in the deformity of a typical clubfoot. Each must be corrected at the proper time if one is to obtain a functionally normal foot.

The most obvious part of the deformity is the adduction of the forefoot. The anterior part of the foot is turned toward the midline giving the sole a

convex outer and concave inner border. In the more pronounced cases, the sole is traversed by a deep crease.

As the forefoot is deviated toward the midline, so is the hindfoot inverted at the heel. This angulation occurs not at the ankle joint, which is held firmly in the ankle mortice, but rather between the talus and the os calcis.

The third part of the deformity is the ankle equinus which is produced by a tight heel cord and posterior capsule. The heel is drawn upward, and the forepportion of the foot is forced into plantar flexion.

Not all cases of clubfoot manifest the fourth part of the deformity, known as tibial torsion. This usually is seen in those children with a more pronounced deformity but should always be looked for, as it occasionally occurs in clubfoot of rather moderate degree. Tibial torsion is produced by an inward rotation of the tibia and fibula. It is detected by holding the leg with the knee extended and the patella pointing straight upward. In the normal foot held in this position, the lateral malleolus lies slightly behind the medial malleolus. When tibial torsion is present the two malleoli are on the same plane, or the lateral malleolus may actually be anterior.

It cannot be emphasized too strongly that treatment should begin early; it is most effective when it is begun during the first 6 months of life.

A satisfactory practice is to evaluate the deformity a few days after the child is born. At the same time a search is made for evidence of congenital dislocation of the hip, which is occasionally associated with clubfoot. The whole situation is then discussed with the baby's mother, and she is told to bring him to the office for his first cast when he is between 1 and 2 months old. This allows the mother to recover sufficiently from the delivery to be able to bring the child to the office at weekly intervals, and also permits the infant to get used to his new environment before a cast is placed on his leg.

Treatment is then carried out in the office at weekly intervals, using wedging casts until the deformity is fully corrected. This is usually accomplished by the time the child is about 7 or 8 months old. A Denis Browne splint is then fastened to a pair of firm-soled baby shoes which are worn on the opposite feet. The splint is continued until the child is about 1 year old and is ready to stand and walk. It is then necessary that clubfoot shoes be worn during the daytime and the splint at night.

When the splint is abandoned altogether, the mother is instructed in stretching exercises to carry the forefoot into abduction and the hindfoot into dorsiflexion. These are carried out several times a day for 10 to 15 minutes at a time and should be continued until the child is several years of age or until the foot remains in satisfactory position.

If at any time there is evidence that the deformity has recurred, the foot is again placed in a cast, and further wedging is carried out, followed by a period of retention.

Ninety percent of patients with clubfoot treated by conservative measures like those outlined herein obtain completely corrected feet which function well. It is essential that treatment be started early for best results. Kite has found

that 10 to 15 percent of his patients relapse and require a second course of wedging. In addition to this group, approximately 10 percent of patients subsequently require some type of surgical operation. (GP, Oct. 1951, G. M. Hart)

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Bezoars

The fascinating word "bezoar" comes straight from Arabic and signifies the concretions found in the stomachs of animals. The objects themselves are hardly less entertaining than their name. In the middle ages they were credited with magical and beneficent properties, and Queen Elizabeth's jewels are said to have included a great bezoar stone set in gold. In our present enlightened age we may doubt whether they are ever beneficent; for we know that in man they may produce some distressing symptoms.

Bezoars are of 4 types, according to their composition. In man the commonest is the trichobezoar, composed of swallowed hair; and others are phytobezoars, composed of fruit and vegetable fibers, and trichophytobezoars, which are a mixture of hair and vegetable matter. Concretions of shellac (which is used in furniture polishes) are the fourth type, and are thought to result from swallowing alcoholic solutions of shellac for the sake of the solvent. The common trichobezoar is found most often in nervous young girls, and its symptoms are abdominal pain, preference for liquid foods, vomiting, halitosis, anemia and wasting. Radiography has made the diagnosis easy, and treatment consists in gastrotomy and removal of the bezoar. If the concretion is left it is likely to cause death from inanition, obstruction or pressure necrosis of the stomach wall. Hurwitz and McAlenney have recently recorded 2 cases of trichobezoar. The first was in a girl of 12 who was admitted to hospital for severe abdominal pain with fever. There was a large and very tender epigastric mass, and radiological examination revealed its probable nature. At gastrotomy an enormous trichobezoar, 15 inches long and weighing 2 1/2 lb. when dry, was successfully removed. A similar fortunate outcome is recorded in the case of a girl of 5 from whose stomach a somewhat smaller trichobezoar was extracted. The true diagnosis had been suspected before admission to hospital, because the patient had chewed her hair and eaten the fuzz from blankets, and a spleen-like mass was palpated in the epigastrium. Brown and Schneider report an even more curious bezoar in a Negress of 56 who had eaten laundry starch "for the menopause" - a fact that was brought to light only after the filling defects in the stomach had been seen by gastroscopy to be due to a very large foreign body. The stomach was washed out with 1 percent hydrogen peroxide and mineral oil; and the starch bezoar, broken up by this treatment, was aspirated in 4 days.

Bezoars, though rare, should be borne in mind when young girls or insane females present with gastric symptoms and odd epigastric masses. ("Annotations", The Lancet, 15 Sept. 1951)

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Gout in Young People

Since the average age of onset of gouty arthritis is 40 years, the occurrence of gout is often overlooked in early life. The attacks may be infrequent, with complete abeyance between exacerbations, and the disease may, in fact, remain dormant and asymptomatic throughout life. Hyperuricemia may be the only sign. Before the appearance of detectable urate deposits, the entity should be referred to as pre-tophaceous gout. The disease may be of several years duration before tophi can be demonstrated. The incidence of gout during early years is not known, but some gouty patients will, on careful questioning, date their symptoms back to teen age.

In gout there is a derangement in the breakdown of nucleoprotein and purine metabolism. Apparently this defect is congenital. Recent observations indicate that the derangement may be due to abnormal or insufficient pituitary-adrenal response to stress.

One can only speculate as to the cause of hyperuricemia. There may be increased formation, diminished excretion or decreased utilization of uric acid. An increased formation may be associated with hepatic dysfunction, since uric acid is mainly formed in the liver. Mild hyperuricemia without manifestation of gout is present in leukemia, polycythemia and hemolytic anemia.

Pain in the first metatarsophalangeal joint has long been recognized as a manifestation of gout. The joints most commonly involved are, in order of frequency, the foot, hand, knee, elbow, shoulder and hip. Joint involvement may be single or multiple. The swelling, tenderness and redness present over a gouty joint suggest inflammation. Complete remission following an acute attack is the rule, although repeated episodes may be expected.

Emotional upsets, an operation, alcoholic excess, trauma, undue exercise or physical exertion may initiate an episode of symptomatic gout. Spring is a favorite season for attacks, and allergic phenomena are frequently noted in gouty individuals.

During an attack the blood uric acid is usually over 6 mg. per 100 cc., but it may be within normal limits (2 to 4 mg.). There is no correlation between the uric acid content and the clinical severity of the attack. An increased sedimentation rate is noted during the acute period.

Tophi prove the presence of gout, but are infrequent in the younger individual. Urate crystals are deposited in or on the joint capsule, cartilage, bursa, ligaments and tendinous structures, resulting in a foreign body response. These deposits are often noted on the fibrocartilage of the external ears. Destruction or replacement of bone takes place, together with overgrowth of bone, as in hypertrophic arthritis. A pannus forms around the joint, simulating atrophic arthritis.

Histologic studies are not helpful in the diagnosis other than to demonstrate the presence of sodium biurate crystals. Since formalin dissolves these crystals, the tissue from the tophus must be placed in absolute alcohol in order to preserve

them. The murexide test may be used chemically to detect uric acid. This simple test consists of adding a few drops of nitric acid to the substance from the tophus, allowing it to dry, and then adding a few drops of ammonium hydroxide. This will produce a purple color if urates are present.

Roentgen studies of the involved joints may show no abnormality. The typical changes most likely to be noted are eroded or punched out cystic areas near joints. From the roentgenographic findings one must differentiate atrophic and hypertrophic arthritis, bone cysts, enchondromas, Boeck's sarcoid and hyperparathyroidism.

Urinary complications are infrequent in early life except for urate ureteral calculi. Chronic nephritis due to gout is a complication later in life.

Gout is a metabolic disorder for which we have no cure but for which we do have methods of control. Colchicine is specific for gout, and a therapeutic trial to establish the diagnosis is often indicated. The dosage is 0.5 to 0.6 mg. (1/120 to 1/100 gr.) every 2 hours 2 days per week, unless diarrhea occurs. A prophylactic dose of 0.5 mg. (1/120 gr.) given 3 times a day 3 days each week is of value in preventing recurrent attacks. Salicylates are useful because of the analgesic effect and also because they increase the excretion of uric acid.

There is some evidence that dietary restriction makes no difference in the course of the disease. A reasonably low purine diet, omitting fishes, liver and concentrated extracts of meat, does seem of merit. Avoidance of emotional upheavals, alcohol and food excesses, fatigue, strenuous sports and hard physical labor is recommended.

Cortisone or adrenocorticotropic hormone usually brings prompt relief of pain during a severe attack. Complete relief is the rule after one or two 100 mg. doses of cortisone. Colchicine can then be used to keep the patient asymptomatic. (North Carolina M. J., Sept. 1951, D. Flinchum & J. A. Powers) (See also Medical News Letter Vol. 17, No. 9, 4 May 1951)

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Selected Research Report

Decrease of Adrenal Ascorbic Acid and Cholesterol in the Rat and Guinea Pig, Following Large Doses of Glutathione: Glutathione, in a dosage that increases potassium tolerance in mice (400 mg./100 Gm. body weight) decreased adrenal ascorbic acid and cholesterol in rats and guinea pigs. Adrenal recovery occurs within 24 hours in rats but takes longer in guinea pigs. Glutathione also gave evidence of toxicity, having an LD_{50} of 300 and 830 mg./100Gm. for guinea pigs and mice, respectively, and an approximate MLD of 700 mg./100 Gm. for rats. (Project NM 007 081 11.01, NMRI, NNMC, Bethesda, Md.)

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From the Note Book

1. Rear Admiral Lamont Pugh, the Surgeon General, delivered an address entitled, "The Role of the Reserve Medical Officer" on 22 October at the 4th Naval District, second annual medico-military symposium held at the USNH, Philadelphia. The Surgeon General also delivered an address entitled, "Recent Activities of the Medical Department of the Navy in the Pacific and Far Eastern Theaters" on 29 October 1951 at the 1st Naval District, second annual medico-military symposium held at the USNH, Chelsea, Mass. (PIO, BuMed)

2. Rear Admiral C. J. Brown, MC, USN, Deputy and Assistant Chief of Bureau, represented the Navy October 27-31, 1951, at the 62nd annual meeting of the Association of American Medical Colleges, held at French Lick, Indiana. (PIO, BuMed)

3. Civil defense is thoroughly discussed and outlined and various factors of civil defense applicable to any community will be found in the October 1951 issue of the Journal of the Missouri State Medical Association.

4. Thirty-five men between the ages of 66 and 92 (mean 78) and 17 women between 60 and 85 (mean 75) years were selected for study in endocrine studies in aging. Three objectives were sought: (1) the measuring of the mean values for the output of pituitary, gonadal and adrenal cortical hormones, to determine possible sex differences, and to compare the values of the aged group with those encountered in young subjects; (2) to search for possible interrelationships between the changes in output of the 3 hormones as aging progressed; (3) to determine whether any correlation could be established between the functional activity of these glands as reflected by the assays, and the degree of aging as observed clinically in various organs and tissues. (J. Clin. Endocrinol., Sept. 1951, A. L. Heller & R. A. Shipley)

5. Food intake of elderly hospitalized patients is discussed in Nutrition Reviews, October 1951.

6. Chrome Alloy in Orthodontics is discussed in the American Journal of Orthodontics, October 1951, N. G. Gaston.

7. The Journal of the American Dental Association reports that there is little or no scientific evidence to support the theory that infected teeth in themselves are a major cause of arthritis, heart ailments, kidney diseases, eye disorders or skin diseases. (Dental Items of Interest, Oct. 1951)

8. Blood pressure reduction to a selected level by continuous injection of methonium halides (C5 and C6) and the use of an electrically operated syringe is discussed in the American Heart Journal, October 1951, by F. H. Smirk.

9. A study, carried out at the Drammen Hospital, Drammen, Norway, of partial gastrectomy for ulcer and postoperative complications will be found in Surgery, October 1951. (K. Nicolaysen & B. Fretheim)

10. All 9 Civil Defense Administration regional offices are now in operation. They are located in Boston, Richmond, Atlanta, Cleveland, Chicago, Dallas, Denver, San Francisco and Seattle. (Miscellany, J. A. M. A., 13 Oct. 1951)

11. Vaccination against tuberculosis with freeze-dried BCG vaccine is discussed in American Journal of Public Health and the Nation's Health, by F. Van Deinse.

12. The management of the comatose patient is discussed in GP, October 1951, R. Meyers and M. E. Meyers.

13. A survey of the mosquitoes of Guam in 2 periods in 1948 and 1949 and its epidemiological implications appears in the American Journal of Tropical Medicine, September 1951, W. C. Reeves and A. Rudnick.

14. The greatest depth of water in the Great Lakes is 168 fathoms at a position in Lake Superior. (Science News Letter, 6 Oct. 1951)

15. A comparative study of specimens of spinal fluid taken from the Cisterna Magna and the lumbar subarachnoid space appears in the Journal of Venereal Disease Information, October 1951, M. R. Davis, G. R. Cannefax and E. B. Johnwick.

16. A report of 3 cases of Cat-Scratch Fever will be found in the Journal of Pediatrics, October 1951, H. L. Lange. (See Medical News Letter, Vol. 17, No. 10)

17. Alcoholics Anonymous, which in 16 years of existence has brought recovery to 120,000 chronic drinkers, received one of the 1951 Lasker Awards at the meeting of the American Public Health Association in San Francisco on 30th Oct. 1951.

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List of Recent Reports Issued by Naval Medical Research Activities

Naval Medical Research Institute, NNMC, Bethesda, Maryland

On "High Energy Phosphate Bonds" of Biochemical Interest, NM 000 018.06.03, 28 July 1951

The Effect of Antibiotics and Metabolites on the Immunity of Mosquitoes to Malarial Infection, NM 005 048.06.03, 14 August 1951

Radial X-Ray Beam Characteristics at 230 K. V. P., NM 006 012.04.39, 21 August 1951

Lysergic Acid Diethyl Amide (LSD-25). A Clinical-Psychological Study, NM 001 056.06.02, 9 September 1951

U. S. Naval School of Aviation Medicine, U. S. Naval Air Station, Pensacola, Fla., and Emory University School of Medicine, Atlanta, Ga.

The Cerebral Circulation and Metabolism in Chronic Pulmonary Emphysema With Observations on the Effects of Inhalation of Oxygen, NM 001 050.01.02, 26 July 1951

U. S. Naval School of Aviation Medicine, U. S. Naval Air Station, Pensacola, Fla.

Further Evaluation of Present Day Knowledge of Cosmic Radiation in Terms of the Hazard to Health, NM 001 059.13.02, 15 August 1951

U. S. Naval Medical Research Unit # 3, Cairo, Egypt

The Treatment of Amebiasis With Fumagillin, NM 007 082.16.01, 24 July 1951

Demonstration That Para-aminohippuric Acid "Enters" the Human Erythrocyte, NM 007 082.15.01, 27 July 1951

Biological Factors of Ticks (Ixodoidea) of the Ethiopian Faunal Region in Relation to Human Injury and Disease, NM 005 050.29.06, 15 August 1951

Exposure of Planorbid Snails From the Western Hemisphere to Miracidia of the Egyptian Strain of Schistosoma mansoni, NM 005 050.23.01, 17 August 1951

Natural Infection of an Egyptian Gerbil With Schistosoma mansoni, NM 005 050.24.01, 17 August 1951

BUMED CIRCULAR LETTER 51-134 11 October 1951

From: Chief, Bureau of Medicine and Surgery
To: Commanding Officers, All U. S. Naval Hospitals, CLUSA

Subj: Manual for Medical Examiners of the Veterans Administration, Revised June 1951

Ref: (a) BUMED Cir Ltr No. 50-22

Encl: (1) Copies of subject manual

1. The enclosures are forwarded herewith for use in preparing clinical board reports as required by reference (a).

2. Through the use of this manual, the medical officers who prepare clinical board reports will be able to present them in a manner that will facilitate the work of the members of the physical evaluation boards. It is requested that all members of clinical boards convened in your command be required to familiarize themselves with the provisions of the enclosure and to follow these instructions in preparing clinical board reports.

H. L. Pugh

The above letter will not be printed in the Navy Department Bulletin.

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JOINT LETTER 5 October 1951

BUMED CIRCULAR LETTER 51-135; C 3, SR 40-410-10; AFR 160-55C

Subj: Central facilities provided for Department of Defense by Armed Forces Institute of Pathology

Ref: (a) Army-Navy-Air Force Joint Ltr of 8 Jun 1950; BUMED Cir Ltr No. 50-50 (as amended by BUMED Cir Ltr Nos. 50-125 and 51-25), SR 40-410-10, AFR 160-55

1. Paragraph 8a of reference (a) is changed as follows:

In place of present separate listings for "Second Army Area and Ninth Air Force" and "Military District of Washington," substitute:

Army areas and Air Force installations therein	Name and location of center	Naval Districts
Second Army Area and Ninth Air Force and Military District of Washington	Second Army Area Medical Laboratory Fort Geo. G. Meade Md.	

J. Lawton Collins C. J. Brown Hoyt S. Vandenberg

The above letter will not be published in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 51-136 15 October 1951

From: Chief, Bureau of Medicine and Surgery
To: Holders of the Bulletin of BUMED Circular Letters

Subj: BUMED circular letters; cancelation of

1. The following BUMED circular letters are canceled for the reasons indicated:

Letter	Subject (in brief)	Reason
46-103	Enlisted Wave personnel; hospitalization of	Now routine procedure.
47-158	Program allotments for care of the dead	Obsolete. Pertinent provisions in later directives.
48-90	Reporting marital contacts of V. D. patients	Adequate coverage by art. 3-12(2), ManMedDept, and by NAVMED-P-1288, Interviewer's Aid for V. D. Contact Investigation.
48-133	Clinical research in naval hospitals	Subject covered by sec. IV, ch. 1, ManMedDept.

Letter	Subject (in brief)	Reason
49-10	Medical research in ships and stations other than hospitals	Do.
49-57	Cross index system for clinical records	Served its purpose.
49-82	BEC Forms C. A.-10 and C. A.-11	Do.
49-132	Photodosimetry; integration into Industrial Health Program	Sufficient coverage by Radiological Safety Regulations (NAVMED-P-1325) (ch. 5), and arts. 23-21 and 23-142, ManMedDept.
50-18	Reporting Air Force personnel treated in naval facilities	Served its purpose.
50-43	Instructions Governing Individual Statistical Report of Patient (NAVMED-F)	Do.
50-80	Computing of capacities and bed status	Do.
50-141	Report of Surgical Operations, NAVMED-P	Do.
51-21	Instructions Governing Individual Statistical Report of Patient (NAVMED-F), NAVMED-P-1313; changes in	Served purpose as letter of transmittal. Changes have been incorporated in sec. IV of ch. 23, ManMedDept. Changes remain in effect for NAVMED-P-1313.
51-44	Film strip--Certification of Cause of Death	Served its purpose.

H. L. Pugh

The above letter will not be printed in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 51-137 17 October 1951

From: Chief, Bureau of Medicine and Surgery
To: Distribution List

Subj: Quarterly Report of Medical Officer Personnel, NAVMED-1341; submission of

Encl: (1) Initial supply of Quarterly Report of Medical Officer Personnel, NAVMED-1341

1. Effective for the quarter ending 31 December 1951, subject report shall be prepared and submitted to the Bureau of Medicine and Surgery by each of the addressees to report the naval medical officers attached to aviation activities within their respective commands.

2. Instructions for the submission of the NAVMED-1341 are as follows:

a. A complete recapitulation of medical officers within each addressee's command shall be compiled as of the last day of each March, June, September, and December; and one copy of the completed report shall be forwarded before the fifteenth (15th) day of the following month to the Chief of the Bureau of Medicine and Surgery.

b. The report should be prepared by the staff medical officer or the senior medical officer in accordance with instructions on the form.

H. L. Pugh

The above letter will not be printed in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 51-138 18 October 1951

From: Chief, Bureau of Medicine and Surgery
To: All Medical Activities and Facilities

Subj: Object and Subobject Classification of Medical Department Appropriational Estimates, Obligations, and Expenditures

Ref: (a) BUMED Cir Ltr No. 51-96

1. Effective upon receipt, the following change shall be made in reference (a). In paragraph 5, under object symbol and title "OBJECT 06--PRINTING AND

REPRODUCTION," change the third subparagraph to read:

"Printing and binding of books and publications, including manuals, pamphlets, periodicals, circulars, etc., shall not be procured in advance of specific Bureau approval; except, that printing and binding obtainable from a district printing and publications office does not require Bureau approval, but shall be procured in accordance with the procedures of the district concerned."

H. L. Pugh

The above letter will not be printed in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 51-139 19 October 1951

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations

Subj: BUMED circular letters; cancelation of

Ref: (a) Catalog of Hospital Corps Schools and Courses, NAVMED-P-367, 1951, Second Revision

1. Having been superseded by reference (a) or having served their purpose otherwise, the following letters concerning schools, courses, and training of Hospital Corps personnel are hereby canceled:

BUMED Cir Ltr No.	NDB issue and No.
47-49	
48-19	
48-116	
49-67	
49-69	
49-80	
49-88	NDB Jul-Dec 1949, 49-495, p 110
49-99	NDB Jul-Dec 1949, 49-611, p 111
49-105	NDB Jul-Dec 1949, 49-614, p 112
49-106	NDB Jul-Dec 1949, 49-615, p 113
49-119	NDB Jul-Dec 1949, 49-688, p 115
49-150	NDB Jul-Dec 1949, 49-814, p 127
49-151	
49-166	NDB Jul-Dec 1949, 49-901, p 129
50-106	
50-107	

H. L. Pugh

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Short Course in Industrial Health

Applications are now being accepted by the Bureau of Medicine and Surgery for a 2-months course in Industrial Health to be given at the Harvard University School of Public Health, Boston, Massachusetts from 4 February 1952 to 29 March 1952.

The course, conducted by Dr. Philip Drinker and associates, will offer intensive instruction in the following subjects: Basic Problems in Industrial Hygiene (lectures, demonstrations and field trips); Industrial Medicine (elements of an industrial medical program, medico-legal aspects, disability evaluation, relations to safety, nursing and planning, using case studies of plants); Personnel Administration (employee health, interrelations with safety, production, etc.); Human Problems of Adjustment in Industry (stresses, biologic adjustment, design, placement, etc.) and Industrial Medical Clinics.

Medical officers on active duty who desire to attend the course under the auspices of the BuMed Training Program should submit their applications at the earliest practicable date to the Chief, Bureau of Medicine and Surgery. The $225.00 cost of tuition and fees will be paid by BuMed, and authorization orders ONLY provided in the case of officers approved to attend the course. No service agreement is required; however, USNR medical officers requesting the course must have a minimum of 1 year of active duty remaining to serve following completion of the course. (Prof. Div., BuMed)

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NAVY DEPARTMENT
BUREAU OF MEDICINE AND SURGERY
WASHINGTON 25, D. C.

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